

(PWSNO 1280119)

**MCKINLEY HEIGHTS CO-OP WATER ASSOCIATION  
SOURCE WATER ASSESSMENT REPORT**

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**January 23, 2002**



**State of Idaho  
Department of Environmental Quality**

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## Source Water Assessment for McKinley Heights Co-op Water Association

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within the well recharge zone, your water quality history, construction characteristics associated with your well or wells, and site specific sensitivity factors associated with the aquifer your water is drawn from.

This report, *Source Water Assessment for McKinley Heights Co-op Water Association* describes the public drinking water source, land use and potential contaminant sites inside the well recharge zone boundaries, and the susceptibility (risk) that may be associated with any potential contaminants. DEQ used a refined computer model approved by the EPA to map the boundaries of the well recharge area into time of travel zones indicating the number of years necessary for a particle of water to reach a well. The computer model for wells on the Rathdrum Prairie Aquifer used data assimilated by DEQ from a variety of sources including well logs in the vicinity of the McKinley Heights Co-op Water Association well.

This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

**Potential Contaminant Inventory.** The McKinley Heights Co-op Water Association well, located near the northeast corner of 6<sup>th</sup> and Corbin in Bayview, Idaho serves 15 residential connections with an estimated population of 22 people. The recharge zone DEQ delineated for the well is a narrow corridor encompassing about 6.5 acres and stretching approximately 0.3 mile eastward from the well to the edge of the Rathdrum Prairie Aquifer defined by Lake Pend Oreille. The recharge zone is divided into 0-1, 1-3 and 3-6 year time of travel zones, representing the time for a particle of water to reach the well from the zone boundary. Land use inside the delineation boundaries is primarily residential. A map showing the location of the well, the well recharge zone, and potential contaminant sites in the vicinity is on page 5 of this report.

Municipal sewer components including two septic tanks and a sewer main are the only potential contaminant sites documented inside the delineation boundaries. They are denoted with red crosses on the map for your well. The tanks and main are located closer to the well than permitted under *Idaho Rules for Public Drinking Water Systems*, but a waiver granted March 2, 2001 and a parallel variance granted to Bayview Water and Sewer District allow their continued use. For the purposes of this assessment the presence of the municipal sewage components was noted as a single potential contaminant source in the 0-3 year time of travel zone, rather than as a source in the more stringently regulated sanitary setback.

**Water Quality History.** McKinley Heights Co-op Water Association, under regulation as a non-community transient public water system, is required to monitor quarterly for bacterial contamination. Only two-distribution system samples, tested in January 1999 and October 2000, have been positive for total coliform bacteria. Nitrate concentrations have ranged between 0.643 and 1.1 mg/l. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l. Synthetic Organic Chemicals (SOCs) and Volatile Organic Chemicals (VOCs) were not present in the water when it was tested in 1993. VOCs have been detected in water from other wells in Bayview. The well was also tested for radiological contaminants in 1993, which were present but in concentrations far below the MCL.

**Well Construction.** The McKinley Heights Co-op Water Association well was constructed at an unknown date, possibly in the 1930s. It has a 6-inch casing and is reported to be only 60 feet deep. The well log is not on file with DEQ, so details about the depth of the casing and surface seal, the depth of the water table and the soil strata at the well site are unknown.

The sanitary survey of McKinley Heights Co-op Water Association Water Association system conducted in June 1999 noted that the well casing needs to be extended at least 12 inches above grade to be in conformance with state regulations. The well is encased in a concrete block building built over a pit. There was about an inch of standing water in the pit when it was inspected.

**Well Site Characteristics.** Soils in the well recharge zone are generally well drained. Well-drained soils provide little protection against migration of contaminants toward the well. The soil structure above the water table in the well is unknown because the well log is not available.

**Susceptibility to Contamination.** A susceptibility analysis of the McKinley Heights Co-op Water Association well, incorporating information from the public water system file and the potential contaminant inventory, ranked the well highly susceptible to microbial contamination. The well is vulnerable because it is shallow, located in a fairly high-density residential area, and the recharge zone soils are very porous. Additionally, municipal septic tanks and a sewer main are located where an accidental spill reaching the ground water could be carried to the well in a year or less.

Susceptibility to inorganic chemical contamination and to SOCs and VOCs is in the moderate range. Most of the points marked against the well come from the system construction and hydrologic sensitivity portions of the susceptibility analysis. The susceptibility analysis worksheet for your well on page 7 this report shows how your well was scored. Formulas used to compute the final susceptibility scores are at the bottom of the worksheet.

While many of the factors used to assess vulnerability to contamination are unknown because the McKinley Heights Co-op Water Association well log is unavailable, the scores assigned to your well are in line with scores for other wells on the Rathdrum Prairie Aquifer where the composition of the soil above the water table is known. Typical well logs record sand, gravel and cobbles without a significant clay layer to retard vertical transport of contaminants.

**Source Water Protection.** This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For McKinley Heights Co-op Water Association drinking water protection activities should focus first on bringing the well into full compliance with *Idaho Rules for Drinking Water Systems*. Improvements suggested in The 1999 sanitary survey, especially draining and back filling the well pit, and ensuring the water tightness of the well casing protect the well from surface contaminants. The sanitary setback (50-foot radius around the well) is the next line of defense against contamination. You may want to fence this area to prevent vehicles from being parked too close to the well. A fence is also a reminder to keep pets off the well lot, and to avoid using yard care chemicals such as fertilizers, pesticides and herbicides in this zone.

Because the water system does not have direct jurisdiction over the entire recharge zone for its well, it will be important to form partnerships with neighbors, and public agencies to regulate land uses that can degrade ground water quality. The 186 public water systems in Idaho that draw water from the Rathdrum Prairie Aquifer should consider forming a regional group to represent their interests before state, county and municipal governing bodies when regulatory tools like zoning overlays, or enactment of building codes are the most appropriate ground water protection measures. The goal of source water protection is to maintain current water quality for the future despite the changes we can expect with population growth in North Idaho.

For assistance in developing source water protection strategies please the Coeur d'Alene Regional DEQ office at 208 769-1422.

**DEQ website:**

<http://www2.state.id.us/deq/>

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## Ground Water Susceptibility

Public Water System Name : **MCKINLEY HEIGHTS CO OP WATER ASSN**  
Public Water System Number : **1280119**

Source: **WELL #1**  
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1. System Construction		SCORE			
Drill Date	UNKNOWN				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES 1999				
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	UNKNOWN	2			
Highest production 100 feet below static water level	NO	1			
Well protected from flooding	NO	1			
<b>Total System Construction Score</b>		<b>5</b>			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	UNKNOWN	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
<b>Total Hydrologic Score</b>		<b>6</b>			
3. Potential Contaminant / Land Use - ZONE 1A (Sanitary Setback)		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Zone 1A	URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
<b>Total Potential Contaminant Source/Land Use Score - Zone 1A</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
Potential Contaminant / Land Use - ZONE 1B ( 3 YR. TOT)					
Contaminant sources present (Number of Sources)	YES Municipal Sewer Components	1	0	0	1
(Score = # Sources X 2 ) 8 Points Maximum		2	0	0	2
Sources of Class II or III leacheable contaminants or Microbials	YES	1	0	0	
4 Points Maximum		1	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less than 25% Agricultural Land	0	0	0	0
<b>Total Potential Contaminant Source / Land Use Score - Zone 1B</b>		<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>
Potential Contaminant / Land Use - ZONE II (6 YR. TOT)					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
<b>Potential Contaminant Source / Land Use Score - Zone II</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Potential Contaminant / Land Use - ZONE III (10 YR. TOT)					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of Zone	NO	0	0	0	
<b>Total Potential Contaminant Source / Land Use Score - Zone III</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>5</b>	<b>2</b>	<b>2</b>	<b>4</b>
<b>4. Final Susceptibility Source Score</b>		<b>12</b>	<b>11</b>	<b>11</b>	<b>13</b>
<b>5. Final Well Ranking</b>		Moderate	Moderate	Moderate	High

The final scores for the susceptibility analysis were determined using the following formulas:

- VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

### Final Susceptibility Ranking:

- 0 - 5 Low Susceptibility
- 6 - 12 Moderate Susceptibility
- > 13 High Susceptibility

## POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.